

REMARKS

The Office Action of August 12, 2009, and the references cited therein have been carefully considered.

It is again requested that the patent to Frease, US 4,664,561, which was applied by the Examiner in the previous Office Action, but not formally cited on the Form PTO-892 included with the Office Action, be formally listed on a Form PTO-892 provided with the next official communication.

In this Amendment, the claims have been amended to overcome the Examiner's formal rejection and claim 1 has been amended to even more clearly define the invention. More specifically, claim 1 has been amended to recite that the radially expandable elongate tubular member is sealed at the end connected to the further elongate member, and that the first and second anchoring actions are independent of one another. Moreover, claim 5 has been amended to recite the "structure" previously recited. It is submitted that these additional features do not require any further search and accordingly entry is requested. The remaining rejected claims have been amended so that they properly depend from claim 14 or a claim dependent thereon. Claims 4, 5, 7, 8, 10, and 14-18 are currently pending.

Reconsideration of the rejection of claims 5 and 8 under 35 U.S.C. §112, second paragraph as being indefinite is respectfully requested. In response, claim 5 has been amended to positively recite the "structure" previously recited and independent claim 14 has been amended has been amended to provide antecedent basis for the "opposed end" of the tubular member as now recited in claim 5. Moreover, claim 8 has been amended to change "one end" to "sealed end" for which antecedent basis is found in claim 14, as amended. Accordingly, it is submitted that with these amendments the rejection claims 5 and 8 under 35 U.S.C. §112, second paragraph as being indefinite has clearly been overcome and should be withdrawn.

Reconsideration of the rejection of claims 4, 5, 7, 8, and 14-17 under 35 U.S.C. §102(b) as being anticipated by the Japanese patent document '199 is respectfully requested.

The present invention is directed to a combined rock bolt including both a friction-type inflatable rock bolt and a mechanical expansion-type rock bolt in order to overcome the problems inherent in each of the two types of rock bolts as discussed in the present application. According to the present invention as defined in independent claim 14, the rock bolt according to the invention includes a friction-type rock bolt, including a radially expandable, inflatable, elongate tubular member (18) having a sealed or closed end (32) connected to one end of a further elongate member (12) and a mechanical expansion type unit or anchor (16), e.g., a wedge-type anchor, connected to the other end of the further elongate member (12). The inflatable friction-type anchor or elongate tubular member (18) is physically displaced from the mechanically expandable anchor unit (16) by the length of the elongate member (12) and, during use, is disposed adjacent the mouth of the drill hole in frictional engagement with the surface of the drill hole, while the mechanically expandable unit (16) is disposed in anchoring relationship with the wall of the drill hole at a distance from the drill hole opening corresponding to the entire length of the rock bolt. With this arrangement, the two anchor portions operate substantially independently of one another. That is, as further recited in claim 14, the first and second anchoring actions provided by the inflatable friction anchor (18) and the expandable mechanical anchor (26) are independent of one another and can be selectively engaged. In particular, the second anchoring action by the mechanical expansion unit is achieved by virtue of pulling and twisting on the end of the rock bolt that protrudes from the bore hole as described in paragraph 30 of the present application. Thereafter, water pressure may be used to expand the sleeve (18), and during this anchoring action, the mechanical expansion unit provides a degree of support. It is submitted that there is no teaching or suggestion in the Japanese reference "199 of providing a rock bolt with two different type anchoring mechanisms, or even two similar type anchoring mechanisms, which are

independently operable to provide independent anchoring actions as required by claim 14, and consequently the claims dependent thereon.

The Japanese reference '199 discloses a rock bolt having a plurality of inflatable radially expandable anchoring sections (2), with the adjacent sections (2) being connected together via tubular sections or pipes (5) or couplings (3). In the Fig. 4 embodiment referenced by the Examiner, an inflatable section (2) is provided at one end of the rockbolt, and connected via the pipe (5) to a further inflatable section (2). In the arrangement of Fig. 4, the right-hand end of the section (2) adjacent the mouth of the drill hole and connected to the pipe section (5) is **not** closed or sealed as required by claim 14 and the inflatable sections (2) are all activated simultaneously. Thus no independent anchoring by the plurality of spaced anchoring sections, as likewise required by claim 14, is provided. Finally, it is submitted that the inflatable anchor (2) of the Japanese reference is not a mechanical expansion anchor, as opposed to an inflatable anchor, as required by claim 14. Accordingly, for the above stated reasons it is submitted that claim 14, and consequently claims 4, 5, 7, 8, and 14-17 dependent thereon, are allowable over the Japanese reference '199.

Reconsideration of the rejection of claims 4, 5, 7, 8, 10, and 14-18 under 35 U.S.C. §103(a) as being unpatentable over the Japanese patent document '199 in view of the US patent to Kovacs is respectfully requested. In urging this ground of rejection, the Examiner has taken the position that the Japanese reference teaches all of the claimed features other than the mechanical expansion anchor, that Kovacs teaches a mechanical expansion anchor of the type used in the present invention, and that consequently, it would be obvious to substitute a mechanical anchor as taught by Kovacs for one of the anchors of the Japanese reference and arrive at the invention defined in the present claims. It is submitted, however, that there is no reason provided in either of these references to combine same in the manner suggested by the Examiner whereby the problems presented by the individual type anchoring devices are overcome, and that moreover, even if the teachings of the two references were combined the result would

not be the invention defined in independent claim 14 as now amended or in any of the claims dependent thereon.

Initially, it is pointed out that claim 14 is allowable over the Japanese reference '199 for the same reasons as discussed above, and the Kovacs reference does not overcome the deficiencies of the Japanese reference '199. The Kovacs reference, like the Japanese reference '199, discloses a rock bolt having two similar anchoring mechanisms which are simultaneously activated. Thus there is no teaching in either of the two references of providing a rock bolt with two anchoring mechanisms which can be set independently of one another as required by independent claim 14 in order to achieve a two-phase anchoring action. Moreover, there is no teaching in either of the references of which anchor (2) of the Japanese reference should be replaced by a mechanical anchor of the type taught by Kovacs-note that the claim specifically requires that the inflatable anchor be adjacent the mouth of the drill hole. Finally, it is pointed out that if the right-hand anchor (2) of the Japanese reference were replaced by a mechanical anchor of the type disclosed by Kovacs, then it would be necessary to substantially modify the hollow pipe (5) connecting the left-hand anchor (2) and the Kovacs type mechanical anchor, both to permit activation of the mechanical anchor and to seal the end of the inflatable anchor (2) to prevent escape of the pressurizing fluid. Thus, in the stated combination, the substitution suggested by the Examiner is not a simple straight forward substitution. Accordingly for the above stated reasons it is submitted that claim 14, and all of the claims dependent thereon are allowable over the combination the Japanese '199 and Kovacs references.

In view of the above amendments and for the above-stated reasons, it is submitted that all of the pending claims, i.e., claims 4, 5, 7, 8, 10 and 14-18, are allowable over the prior art of record, and are in condition for allowance. Such action and the passage of this application to issue are, therefore, respectfully requested.

If the Examiner is of the opinion that the prosecution of the application would be advanced by a personal interview, the Examiner is invited to telephone undersigned counsel to arrange for such an interview.

To the extent necessary during prosecution, Applicant hereby requests any required extension of time not otherwise requested and hereby authorizes the Commissioner to charge any required fees not intentionally omitted, including application processing, extension, extra claims fees, statutory disclaimer, issue, and publication fees, to Deposit Account No. 06-1135 with respect to Order No. 7984-88126.

Respectfully submitted,
FITCH, EVEN, TABIN & FLANNERY

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